

What is claimed is:

1. An electrodeionization apparatus comprising:
  - an anolyte compartment having an anode;
  - a catholyte compartment having a cathode;
  - concentrating compartments and desalting compartments wherein the concentrating compartments and the desalting compartments are formed between the anolyte compartment and the catholyte compartment by arranging alternately at least one anion-exchange membrane and at least one cation-exchange membrane;
  - ion-exchanger with which the desalting compartment is filled;
  - at least one of ion-exchanger, activated carbon, and electric conductor which fills the concentrating compartment;
  - a device for introducing electrode water into the anolyte compartment and the catholyte compartment, respectively;
  - a concentrated water introducing device for introducing concentrated water into the concentrating compartments; and
  - a device for feeding raw water into the desalting compartment to produce the deionized water,
  - wherein the concentrated water introducing device introduces water containing at least one of silica and boron at a lower concentration than the raw water into the concentrating compartments at a side near an outlet for the deionized water of the desalting compartment;
  - the concentrated water introducing device makes the concentrated water flow out of the concentrating compartment at a side near an inlet for the raw water of the desalting compartment; and
  - the concentrated water introducing device discharges at least a part of the

concentrated water flowing out of the concentrating compartments out of a circulatory system,

wherein the desalting compartments are filled with an anion exchanger and a cation exchanger in such a manner that the anion exchanger/cation exchanger volume ratio becomes 8/2 to 5/5.

2. An electrodeionization apparatus as claimed in claim 1, wherein the concentrating compartments are filled with an ion exchanger,

wherein the ion exchanger consists of an anion exchanger and a cation exchanger, and the anion exchanger and the cation exchanger are packed in the concentrating compartments in such a manner that the anion exchanger/cation exchanger volume ratio becomes 8/2 to 5/5.

3. An electrodeionization apparatus as claimed in claim 1, wherein at least one part of the anion exchanger in the desalting compartment is made of a II type anion exchanger.

4. An electrodeionization apparatus as claimed in claim 3, wherein 5 to 15% by volume of the anion exchanger consists of the II type anion exchanger.

5. An electrodeionization apparatus as claimed in claim 1, wherein the ratio of the anion exchanger becomes higher in the nearer position to the inlet for raw water in the desalting compartments.

6. An electrodeionization apparatus as claimed in claim 1, wherein the ion exchanger is a salt type ion exchanger before the electrodeionization apparatus starts to run and is filled in the compartment in such a manner that the volume of the salt type ion exchanger occupies 95 to 100% of the compartment.

7. An electrodeionization apparatus as claimed in any one of claims 1 through 6, wherein

end plates are disposed on the outermost both end sides out of the

cathode or from the cathode to the anode respectively,

the end plates are tied together with tie-rods at the peripheries thereof,  
and

reinforcing members are disposed along at least one lateral side of the electrodeionization apparatus.